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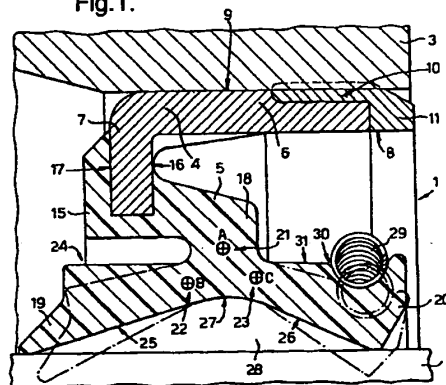
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(54) **Sealing assembly for a moving mechanical member, in particular a rotary shaft of a hydraulic pump**

(57) A sealing assembly (1) for a rotary shaft (2), having a metal structure (4) defined by a sleeve portion (6) and by a radially inner flange (7), and a sealing ring (5) cooperating in sliding manner with the shaft (2); the sealing ring (5) in turn has a connecting portion (15) for connection to the flange (7), and a portion (18) projecting from the flange; two sealing lips (19, 20) extend axially from opposite sides of the projecting portion (18); the two sealing lips (19, 20) and the projecting portion (18) are connected in one piece to one another at respective narrow sections (21, 22, 23), each defining a respective virtual hinge permitting rotation of each element with respect to the others; and the respective centers of rotation (A, B, C) of the virtual hinges are defined, at each axial section of the sealing assembly, by three points arranged substantially in the form of a triangle.

Fig.1.



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EUROPEAN SEARCH REPORT

Application Number
EP 97 11 9168

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	GB 1 455 326 A (SIMMERWERKE SIMMER KG) 10 November 1976 * page 1, line 53-61 * * page 1, line 79-88 * * figure *	1-6, 10, 11	F16J15/32
X	EP 0 367 955 A (GOETZE AG) 16 May 1990 * column 4, line 7-29 * * figure *	1-6, 10, 11	
X	US 4 531 747 A (MIURA TAKESHI) 30 July 1985 * column 1, line 23-42 * * figure 1 *	1-6, 10, 11	
X	US 5 244 215 A (CATHER JR DOUGLAS A ET AL) 14 September 1993 * column 2, line 56-63 * * column 4, line 54 - column 5, line 19 * * figure 5 *	1-5, 11	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			F16J
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 27 April 1999	Examiner Van Wel, O
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document</p>			

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ON EUROPEAN PATENT APPLICATION NO.

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27-04-1999

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 1455326 A	10-11-1976	AT 324788 B CH 577644 A DE 2414634 A FR 2223600 A	25-09-1975 15-07-1976 03-10-1974 25-10-1974
EP 0367955 A	16-05-1990	DE 3837976 A AT 87997 T DE 8817144 U JP 2173475 A	10-05-1990 15-04-1993 08-04-1993 04-07-1990
US 4531747 A	30-07-1985	NONE	
US 5244215 A	14-09-1993	NONE	

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